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LETTER OF TRANSMITTAL

To: **Craig Benson, Federal OSC**
US EPA, Region 9
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Benson.craig@epa.gov
Phone: 562-889-1630

Date: 5/28/2014 **Job No.:** 8355
Re: Orange County Metal Processing
Submittal No. 2
Waste Removal Work Plan
From: Nicole Peacock, Dudek

Transmit Via: Regular Mail

For: ☒ Your Approval ☒ Your Review ☐ Your Files ☐ Your Use ☐ Other (see below)

Copies	Description
2	Waste Removal Work Plan Former Orange County Metal Processing Facility 1711 East Kimberly Avenue, Fullerton, CA

Remarks:

On behalf of the Nancy Baker Trust and the Frojen Family Trust, we are submitting the above-referenced work plan via e-mail, with a hard copy to follow in the mail.

If you have any questions, please contact Rick McNeil, Esq. (714-427-7517 or rmcneil@swlaw.com) or myself at 760-419-5592 or npeacock@dudek.com.

Thank you.

cc: Rick McNeil, Snell & Wilmer, LLP

Signed: Nicole Peacock

Nicole Peacock, Dudek

for Nancy Baker Trust/Frojen Family Trust

Dudek Office: Encinitas

Waste Removal Work Plan

Former Orange County Metal Processing

1711 East Kimberly Avenue, Fullerton, CA

Prepared for: Nancy Baker Trust/Frojen Family Trust
2763 Glendower Avenue
Los Angeles, CA 90027

Prepared by: DUDEK

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Nicole Peacock, P.E., P.G.
Senior Engineer

May 2014

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1.0 Introduction

This Waste Removal Work Plan for the former Orange County Metal Processing (OCMP) facility located at 1711 East Kimberly Avenue in Fullerton, California (site; Figures 1 and 2) presents the general scope of work for the removal of wastes in the vats, secondary containment structures, and wastewater treatment area at the site. The results of the recent waste characterization investigation were used to prepare this Waste Removal Work Plan that is being submitted to the United States Environmental Protection Agency (EPA).

A Unilateral Administrative Order (UAO) was prepared by the EPA and submitted to the Nancy Baker Trust and Robert C. Frojen and Colleen Frojen Trust, among others (the Respondents), on May 8, 2014 (EPA, 2014a). Paragraph 22 of the UAO requires the Respondents to submit a work plan for the removal of hazardous substances from the site. This work plan addresses that requirement from Paragraph 22.

In accordance with the UAO (Paragraph 24), this work plan includes a health and safety plan, presented in Appendix A.

2.0 Site Description

The site is located at 1711 East Kimberly Avenue in Fullerton, California (Figure 1). Access to the site is via East Rosslynn Avenue. The site is located on the western portion of Assessor's Parcel Number (APN) 033-270-30.

2.1 Site History

The site is an inactive former plating facility. The site occupies an approximately 14,000 square foot area. Adjacent businesses include A&I Powder Coating (A&I), which currently operates a powder coating facility north of the site, but in the same building. Interior walls and a door separate A&I from the site. The door between the facilities will be closed whenever work is being conducted in the northern portion of the site. Other adjacent businesses include Rayne Water Conditioning immediately west of the site and the former PCA Metal Finishing, Inc. facility located east of the site.

The site is bounded to the north by Rosslynn Avenue and to the south by a stormwater channel, railroad track, and Kimberly Avenue. South Acacia Avenue is located west of the Rayne Water Conditioning property. Additional industrial facilities surround the site further to the north, south, east, and west.

OCMP operated on the site from approximately 1980 until 2011 (EPA, 2014b). The OCMP operations included electroplating (primarily zinc) and aluminum anodizing (EPA, 2014b). Three plating lines remain in the two central portions of the main building at the site; two zinc plating lines and one anodizing line (Figure 2). The site also includes a wastewater treatment area (with associated waste contained within the vessels; WWT) and an office located east of the main building.

In March 2014, EPA prepared an initial inventory of the vats, labeling the vats (#1 - #57), noting the contents based on label and/or operator recollection, noting the container capacity and volume of material remaining, and noting some characteristics (pH of some of the material). EPA also collected 8 samples for laboratory analysis (pH, metals, and cyanide; Figure 3). Dudek/Chempack conducted additional sampling and characterization in May 2014, as detailed in Section 3. The inventory and sampling data based on both the EPA and Dudek/Chempack characterization is presented as Tables 1 and 2.

3.0 Waste Profiling and Characterization

In March 2014, EPA prepared an initial inventory of the vats at the site. EPA also collected samples from Vats 13, 18, 24, 31, 32, 50, WWT#6, and WWT#XX. Information from the EPA inventory and the EPA sampling data are included in Tables 1 and 2.

On May 14 and 15, 2014, Chempack conducted additional characterization at the site. Chempack screened materials stored in vats and other containers at the site to determine future comingling and disposal criteria. The waste material was screened for pH and oxidizer properties; select samples were also screened for acid, oxidizer, fluoride risk, petroleum product/organics, iodide, bromine, and chlorine. Results of the screening activities are presented in Table 1.

Six samples (including one duplicate) were collected on May 14, 2014 for laboratory analysis from Vats 5, 12, 17, 42, and 51. Three samples were collected on May 15, 2014 for laboratory analysis from Vat 30, the north zinc plating line secondary containment, and a composite sample from WWT#1/WWT#5. The sample locations are shown on Figure 3. The samples were collected using scoops, coliwasas, or similar grab sampling methods. The samples were collected in 8 ounce jars and were analyzed as waste samples (the laboratory analyzed the solids in each sample). Samples from Vats 5, 30, 42, 51, the north zinc plating line secondary containment, and WWT#1/ WWT#5 composite were analyzed for metals by EPA Method 6010B/7471A, cyanide by EPA Method 9010C/9014 and pH by EPA Method 9045D. The sample collected from Vat 12 was analyzed for hexavalent chromium by EPA Method 7196A as

well as pH and metals. The sample collected from Vat 17 was analyzed for metals and pH. Laboratory analytical reports and a quality control evaluation are presented in Appendix B and summarized in Table 2.

The wastes sampled from the following containers exceed the TTLC for the following metals:

- Vat 24 contained 10,000 mg/kg total chromium
- Vat 12 contained 50,100 mg/kg barium, 3,050 mg/kg total chromium, and 660 mg/kg hexavalent chromium
- Vat 42 contained 6,990 mg/kg zinc
- Vat 51 contained 46,800 mg/kg zinc
- Vat 30 contained 23,100 mg/kg zinc

The wastes sampled from the following containers contained cyanide at a concentration greater than the laboratory reporting limit:

- Vats 5, 30, 31, 32, 42, 50, and 51, the north zinc plating line secondary containment, and WWT#XX

The wastes from the following containers had a measured pH (either measured by the laboratory or in the field) of less than 2 or greater than 12.5:

- Less than pH 2: Vats 3, 7, 8, 10, 12, 16, 29, 44, 47, WWT#6 – WWT#9, L2-WWT-5,
- Greater than pH 12.5: Vat 5

The wastes from the following containers are oxidizers based on field testing:

- Vats 16 (slight reaction), 35, and 47

4.0 Waste Removal Activities

4.1 Waste Removal Objectives

The objective of the waste removal is to remove all hazardous substances from the site. The vats, tanks, and other containers and their contents that are slated for removal are presented on Figure 3 and are listed in the inventory in Table 1.

Additional potentially hazardous materials (potentially impacted concrete in the secondary containment and potentially impacted shallow soil) will remain on the site following this removal action. These materials do not pose a threat of violent reaction, fire, or explosion and are best evaluated and characterized following removal of the gross chemicals and hazardous materials. Therefore, following this removal action, the concrete in the secondary containment

(and potentially the soil underneath) will be characterized and removed, if necessary, under a future work plan/work plan addendum.

4.2 Health and Safety

All work will be performed under a site-specific Health and Safety Plan (HASP). The HASP is presented as Appendix A.

Confined spaces will not be entered as a part of this scope of work.

4.2.1 Air Monitoring

Air monitoring will be conducted using a multiRAE gas detector that is calibrated to monitor for hydrogen cyanide and volatile organic compounds. Cyanide gas draeger tubes will also be available for use to confirm hydrogen cyanide detections using the multiRAE. A dust monitor will also be used to monitor the breathing zone at the site during removal activities that may generate dust. Air monitoring procedures and action levels are presented in Section 4.1.1 of the HASP (Appendix A).

4.2.2 Site Access

Site access will be limited to essential personnel during removal activities. Doors to the adjacent business (in the northern room) will remain shut during removal activities.

4.3 Waste Segregation

All wastes will be clearly labeled with their waste category (e.g. Acid) in the associated color (e.g. Red for acid) as shown on Table 1. Incompatible wastes will be labeled as such and will be disposed of during separate events (i.e., cyanide-bearing wastes will be removed and disposed of one day and acidic waste another day).

Composite samples of each type of waste (acid, cyanide, neutral, and oxidizer) may be collected for submittal to the receiving waste facility prior to removal of the waste. Composite samples, if needed, will be collected per the Initial Waste Characterization Work Plan. Analysis of the samples, if needed, will be conducted by the waste facility to determine waste acceptance.

4.4 Waste Removal, Loading, Transportation, and Disposal

Liquids will be pumped into vacuum trucks, totes, or drums, depending on the amount of waste and the ability to be comingled. Liquids that can be comingled share the same color code, as noted on Table 1. The pumps used for cyanide wastes will not be used for acid wastes.

Vats with solids will be removed using a forklift or other heavy equipment. The vats and their contents will be placed in closed-top lined roll-off bins, when possible, or larger bins. Large empty vats or tanks that are too large to fit in a roll-off bin may be transported in enclosed trailers or flat-bed trucks. Large empty tanks that require transport using a flat-bed truck or

enclosed trailer, if any, will be scraped, wiped, or washed free of potential residue, as needed, prior to transport. This may be done for Vats 52-56, which are one large vat rather than 5 separate vats. Empty poly tanks may be cut down as needed. Large empty vats will only be cut down if no other options are available. Decon material or water will be placed in a bin or tote/drum for disposal.

Piping associated with certain vats will be placed in the bin containing the associated vat. Prior to removal of the piping, the piping will be traced to determine the extent of the run. The piping will be tapped or otherwise inspected (possibly including drilling a pilot hole) to determine if materials are present in the piping. Potential liquids in piping will be emptied into drums or totes.

Wood walkway debris will be placed in roll-off bins for disposal with the neutral solid material or empty vats noted on Table 1.

Water, gas, and electrical pipelines will only be removed if necessary in order to carry out the work outlined in this work plan. The appropriate utility companies will be contacted prior to the start of work to confirm that the water, gas, and electricity at the site are shut off.

Small quantities of miscellaneous chemicals (smaller than 10 gallon containers) will be lab packed. Containers of compatible materials will be packed together.

Existing poly drums in the wastewater treatment area will be closed and secured for shipment or bulked with similar materials.

Waste profiles and draft manifests will be submitted to EPA for review prior to the removal of the waste from the site.

All shipments of hazardous waste will be accompanied by hazardous waste manifests completed with the EPA ID Number for the generator. Waste manifests completed by the disposal or treatment facility will serve as a certificate of disposal.

All waste containers will be labeled as Hazardous Waste, with the generator name, the site name, the date, and the type of waste. All waste will be removed from the site for proper disposal within 30 days of waste generation.

All waste will be transported by registered hazardous waste haulers. Waste will likely be disposed of at US Ecology in Beatty, Nevada, US Filter Recovery Services in Los Angeles, California, or Phibrotech in Santa Fe Springs, California. Other waste disposal facilities may be used with approval from the EPA.

5.0 Field Variances

As conditions in the field may vary, it may become necessary to implement minor modifications to the waste removal as presented in this plan. Modifications to the approved plan will be discussed with EPA prior to implementation of the modifications, to the extent practicable. Modifications to the approved plan will be documented in the Waste Removal Report.

6.0 Reporting

Within 30 days of completion of the waste removal and disposal activities included in this work plan, Dudek will prepare a report detailing the removal activities. The report will include the following project documentation: manifests, profiles, and data.

7.0 Schedule

The waste removal at the site will commence upon the EPA approval of this Work Plan. The waste removal is anticipated to be performed over the course of two weeks. Waste disposal of the roll-off bins may take a further one to two weeks.

During the removal, the following schedule will be followed:

- Cyanide liquid wastes will be removed first.
- Cyanide solid wastes will be containerized next.
- Acidic liquid wastes will be removed the following day.
- Acidic solid wastes will be containerized next.
- Neutral liquid wastes will be removed next, followed by neutral solid wastes and other debris.

8.0 Further Work

Upon removal of all the vats and the liquid in the northern secondary containment, the concrete in the secondary containment areas will be assessed for indications of contamination. If required, concrete sampling and potential concrete and soil removal will be conducted under a future work plan/work plan addendum.

9.0 References

EPA 2014a. U.S. EPA Docket No. 9-2014-07, Unilateral Administrative Order for the Performance of a Removal Action. May.

EPA 2014b. Request for a Time-Critical Removal Action at Orange County Metal Processing, Fullerton, Orange Co., CA. May.

Table 1 - Container Inventory
Former Orange County Metal Processing

Container ID	Waste Category	Color Code	Location/Contents	Description of Contents	Estimated Remaining Volume (gallons)	Estimated Remaining Material (inches)	Field Screening Results		Laboratory Results
							pH	Oxidizer	
1	EMPTY	N/A	South anodizing line/Sulfuric Acid Anodizing (18%)	Empty/debris	0	0	*	*	NA
2	ACID	Red	South anodizing line/Water Anodizing Rinse	White-brown solid	22	1 (Solid)	2-3	negative	NA
3	ACID	Red	South anodizing line/Water Anodizing Rinse	White-brown solid	22	1 (Solid)	1-2	negative	NA
4	NEUTRAL	Blue	South anodizing line/Caustic Soda Rinse	White solid	270	12 (Solid)	9-10	negative	NA
5	CYANIDE	Green	South anodizing line/Caustic Soda, Etch Step	Dark liquid and white solid	673	30 (Liquid and Solid)	14 (EPA) 10-11	negative	CN=12 mg/kg Zn=44.3 mg/kg pH = 12.82
6	NEUTRAL	Blue	South anodizing line/Caustic Soda Rinse	Debris/white-brown solid on sides	11	0.5 (Solid)	9-10	*	NA
7	ACID	Red	South anodizing line/Non-Chromate Deoxidizer Rinse	Gray liquid	90	4 (Liquid)	1 (EPA) 0-1	negative	NA
8	ACID	Red	South anodizing line/Deoxidizer	Greenish brown sludge	45	2 (Solid) + some liquid	0 (EPA) 3-4	negative	NA
9	EMPTY	N/A	South anodizing line/Sulfuric Anodize	Debris	0-90	0-3 (Solid)	*	*	NA
10	ACID	Red	South anodizing line/Anodize Rinse Water	Clear-light tan liquid	67	3 (Liquid)	2 (EPA) 0-1	negative	NA
11	NEUTRAL	Blue	South anodizing line/Chromate Rinse	Clear liquid	673	30 (Liquid)	7 (EPA) 4-5	negative	NA
12	ACID	Red	South anodizing line/Chromate (yellow color)	Dark brown liquid with sludge on bottom	808	36 (Liquid)	3 (EPA) 0-1	negative	Ba=50,100 mg/kg Cr (total)=3,050 mg/kg Cr6=660 mg/kg Zn=24.2 mg/kg pH = 2.29
13	NEUTRAL	Blue	South anodizing line/Chromate (yellow color)	Yellow liquid	393	30 (Liquid)	6 (EPA) 8-9	negative	Cr (total)=1.4 mg/kg pH = 7.82
14	NEUTRAL	Blue	South anodizing line/Yellow Anodize	Solids with debris in tank	60	6 (Solid)	9-10	negative	NA
15	NEUTRAL	Blue	South anodizing line/Seal / Nickel Acetate	Light gray solid	90	4 (Solid)	3-4	negative	NA
16	OXIDIZER	Purple	South anodizing line/Seal / Water Rinse	Dark gray solid with some moisture (nitric?)	67	3 (Liquid)	0 (EPA) 0-1	Slight reaction	NA
17	ACID	Red	South anodizing line/Black Anodize Rinse	Black liquid; no sludge	673	30 (Liquid)	2 (EPA) 4-5	negative	Cr (total)=19.7 mg/kg Zn=852 mg/kg pH = 2.82
18	NEUTRAL	Blue	South anodizing line/Black Anodize	Black liquid with sludge on bottom	673	30 (Liquid)	8-9	negative	Cr (total)=510 mg/kg Zn=2,100 mg/kg pH = 3.81
19	EMPTY	N/A	South anodizing line/Blue Anodize	Empty	0-11	0-1 (Solid)	*	*	NA
20	EMPTY	N/A	Western end of south anodizing line/Extra Color - Chemical container trash bin	Chemical container trash bin	0	0	*	*	NA
21	EMPTY	N/A	Western end of south anodizing line/Extra Color	Empty	0	0	*	*	NA
22	EMPTY	N/A	Western end of south anodizing line/Extra Color	Empty	0	0	*	*	NA
23	NEUTRAL	Blue	Western end of south anodizing line/Red Anodize	Red liquid	100	50%	8-9	negative	NA
24	ACID	Red	South zinc plating line/Gold/Yellow Chromate	Dark liquid	219	11 (Liquid)	4 (EPA) 3-4	negative	Cr (total)=10,000 mg/kg Zn=4,300 mg/kg pH = 2.74
25	NEUTRAL	Blue	South zinc plating line/"Soap" Electrocleaner	Greenish-brown (olive) liquid with a small amount of sludge. Organic layer on top.	1346	54 (Liquid)	4 (EPA) 7-8	negative	NA
26	EMPTY	N/A	South zinc plating line/Muriatic Acid	Empty	0-25	0-1 (Solid)	*	*	NA
27	EMPTY	N/A	South zinc plating line/Muriatic Acid Rinse	Empty	0	0	*	*	NA

Table 1 - Container Inventory
Former Orange County Metal Processing

Container ID	Waste Category	Color Code	Location/Contents	Description of Contents	Estimated Remaining Volume (gallons)	Estimated Remaining Material (inches)	Field Screening Results		Laboratory Results
							pH	Oxidizer	
28	EMPTY	N/A	South zinc plating line/Chromate Clear Color	Empty	0-25	0-1 (Solid)	*	*	NA
29	ACID	Red	South zinc plating line/Chromate Clear Color Rinse	Green liquid	449	12-18 (Liquid)	1 (EPA) 1-2	negative	NA
30	CYANIDE	Green	South zinc plating line/Zinc Cyanide Solution	Monolithic, white, hard solid	660	18-22 (Solid)	*	*	CN=460 mg/kg Cr (total)=7.62 mg/kg Zn=23,100 mg/kg pH = 9.78
31	CYANIDE	Green	South zinc plating line/Cyanide Rinse	Clear liquid	539	6-18 (Liquid)	11 (EPA) 10-11	negative	CN=240 mg/kg Cr (total)=7.6 mg/kg Zn=550 mg/kg pH = 9.63
32	CYANIDE	Green	South zinc plating line/Cyanide Rinse	Brown liquid. Moderately basic. Sample also screened using multi-chemical classifier; results were negative for acid, oxidizer, fluoride risk, petroleum product/organics, and iodide, bromine, chlorine	1316	44-50 (Liquid)	11 (EPA) 10-11	negative	CN=2,600 mg/kg Zn=2,100 mg/kg pH = 10.3
33	NEUTRAL	Blue	South zinc plating line/Alkaline-Zinc Rinse	Clear liquid with light scum on top	898	36 (Liquid)	5 (EPA) 8	negative	NA
34	NEUTRAL	Blue	South zinc plating line/Alkaline Zinc Plating Solution	Clear liquid with oil layer on top.	898	36 (Liquid)	6 (EPA) 7-8	negative	NA
35	OXIDIZER	Yellow	South zinc plating line/Chromate	Brown liquid	180	30-36 (Liquid)	4	oxidizer	NA
36	NEUTRAL	Blue	South zinc plating line/Chromate	Yellow liquid, no solids	180	24-36 (Liquid)	6 (EPA) 8-9	negative	NA
37	EMPTY	N/A	South zinc plating line/"Wax" Sealer	Empty	0	0	*	*	NA
38	EMPTY	N/A	South zinc plating line/"Wax" Sealer	Empty	0	0	*	*	NA
39	NEUTRAL	Blue	South zinc plating line/Sealer Rinse	Clear to light green liquid with skim on top.	90	6-8 (Liquid)	5 (EPA) 4	negative	NA
40	EMPTY	N/A	South zinc plating line/Sealer Rinse	Empty	0	0	*	*	NA
41	NEUTRAL	Blue	South zinc plating line/Electrocleaner Rinse	Rusty liquid with skim on top	180	6-12 (Liquid)	4-5	negative	NA
42	NEUTRAL	Blue	South zinc plating line/"Soap" Electrocleaner	Dark liquid	359	12-24 (Liquid)	12 (EPA) *	*	CN=15 mg/kg Cr (total)=57.4 mg/kg Zn=6,990 mg/kg pH = 9.99
43	NEUTRAL	Blue	Southwestern corner of building/old Zinc Chloride; now used for rain water	Clear liquid. Sample also screened using multi-chemical classifier; results were negative for acid, oxidizer, fluoride risk, petroleum product/organics, and iodide, bromine, chlorine	600	100%	5 (EPA) 7-8	negative	NA
44	ACID	Red	North zinc plating line/Electrocleaner Soap	Tan liquid with ~3 inches of sludge on bottom	150	12 (Liquid)	1 (EPA) 3-4	negative	NA
45	NEUTRAL	Blue	North zinc plating line/Electrocleaner Rinse	White solid with brown on surface	37	1-2 (Solid)	neutral	negative	NA

Table 1 - Container Inventory
Former Orange County Metal Processing

Container ID	Waste Category	Color Code	Location/Contents	Description of Contents	Estimated Remaining Volume (gallons)	Estimated Remaining Material (inches)	Field Screening Results		Laboratory Results
							pH	Oxidizer	
46	NEUTRAL	Blue	North zinc plating line/Electrocleaner Second Rinse	Brown solids (rust colored) with blue crystals	19	1 (Solid)	7-8	negative	NA
47	OXIDIZER	Tan	North zinc plating line/Muriatic Acid	Green solid, cohesive. Nitric acid?	25	2 (Solid)	0-1	oxidizer	NA
48	EMPTY	N/A	North zinc plating line/Muriatic Acid Water Rinse	Empty - some rusty dust on bottom	0-25	0-2 (Solid)	*	*	NA
49	NEUTRAL	Blue	North zinc plating line/Muriatic Acid Second Water Rinse	Rust and white/tan crust	0	<1 (Solid)	10-11	negative	NA
50	CYANIDE	Green	North zinc plating line/Zinc Cyanide	Zinc tank - white solid with metal balls	972	39-40 (Solid)	*	*	CN=3,300 mg/kg Zn=23,000 mg/kg pH = 9.26
51	CYANIDE	Green	North zinc plating line/Zinc Cyanide	Zinc tank - white solid with metal balls	748	30 (Solid)	*	*	CN=3,000 mg/kg Cr (total)=8.82 mg/kg Zn=46,800 mg/kg pH = 9.41
52	EMPTY	N/A	North zinc plating line/Zinc Cyanide Rinse	Empty - some rusty dust on bottom	0-12	0-1 (Solid)	*	*	NA
53	EMPTY	N/A	North zinc plating line/Chromate Gold	Empty - some rusty dust on bottom	0-12	0-1 (Solid)	*	*	NA
54	EMPTY	N/A	North zinc plating line/Chromate Gold Rinse	Empty - some rusty dust on bottom	0-12	0-1 (Solid)	*	*	NA
55	EMPTY	N/A	North zinc plating line/Chromate Clear	Empty - some rusty dust on bottom	0-37	0-3 (Solid)	*	*	NA
56	EMPTY	N/A	North zinc plating line/Chromate Clear Rinse	Empty - some rusty dust on bottom	0-12	0-1 (Solid)	*	*	NA
57	EMPTY	N/A	North zinc plating line/"Final water rinse"	Empty - some rusty dust on bottom	0-12	0-1 (Solid)	*	*	NA
WWT1	NEUTRAL	Blue	Wastewater Treatment System - lower level	Clear-brown liquid with some sludge on bottom	65	15 (Liquid)	5 (EPA) 8-9	*	Cr (total)=0.627 mg/kg Zn=415 mg/kg pH = 6.99
WWT2	NEUTRAL	Blue	Wastewater Treatment System - lower level	Sludge	31	6-12 (Liquid)	10	*	NA
WWT3	NEUTRAL	Blue	Wastewater Treatment System - lower level	Sludge	52	6-12 (Liquid)	10	*	NA
WWT4	NEUTRAL	Blue	Wastewater Treatment System - lower level	Sludge	34	6-12 (Liquid)	5 (EPA) 9	*	NA
WWT5	NEUTRAL	Blue	Wastewater Treatment System - lower level	Clear liquid, some sludge in bottom	45	12 (Liquid)	5 (EPA) 8-9	*	Cr (total)=0.627 mg/kg Zn=415 mg/kg pH = 6.99
WWT6	ACID	Red	Wastewater Treatment System - lower level/ Hex-Chrome Treatment: pH adjust, Cr Reduction	EPA sampled	135	24 (Liquid)	2 (EPA) *	*	Zn=7.0 mg/kg pH = 1.59
WWT7	ACID	Red	Wastewater Treatment System - lower level	Clear liquid, some sludge in bottom	36	12 (Liquid)	0-1	negative	NA
WWT8	ACID	Red	Wastewater Treatment System - lower level	Clear liquid, some sludge in bottom	65	15 (Liquid)	0-1	*	NA
WWT9	ACID	Red	Wastewater Treatment System - lower level	Clear liquid, some sludge in bottom	40	15 (Liquid)	0-1	*	NA
WWT10	EMPTY	N/A	Wastewater Treatment System - lower level/Final pH adjust for Cr and CN treated rinse waters	Appears empty, can't access	NM	0-1 (Solid)	*	*	NA

Table 1 - Container Inventory
Former Orange County Metal Processing

Container ID	Waste Category	Color Code	Location/Contents	Description of Contents	Estimated Remaining Volume (gallons)	Estimated Remaining Material (inches)	Field Screening Results		Laboratory Results
							pH	Oxidizer	
WWT(x)	CYANIDE	Green	Wastewater Treatment System - lower level	Open container with white solids	75	18 (Solid)	*	*	CN=110 mg/kg Cr (total)=740 mg/kg Zn=4,200 mg/kg pH = 9.38
WWT(x)-S	CYANIDE	Green	Wastewater Treatment System - lower level	Open container with white solids	75	20 (Solid)	*	*	NA
L2 WWT-1	NEUTRAL	Blue	Wastewater Treatment System - upper level/Sodium hydroxide	Clear liquid with algae	70	37 (Liquid)	9	*	NA
L2 WWT-2	NEUTRAL	Blue	Wastewater Treatment System - upper level/Sodium hypochlorite	Clear liquid	12	6 (Liquid)	9	*	NA
L2-WWT-3	NEUTRAL	Blue	Wastewater Treatment System - upper level/Midflow anionic flow (polymer)	Dark brown/black liquid/sludge	60	32 (Liquid)	9	*	NA
L2-WWT-4	NEUTRAL	Blue	Wastewater Treatment System - upper level/Calcium chlorite (likely calcium chloride)	Clear liquid with scum on top	34	18 (Liquid)	7	*	NA
L2-WWT-5	ACID	Red	Wastewater Treatment System - upper level/10% sulfuric acid	Clear to brownish liquid, scum on top	53	42 (Liquid)	1	*	NA
L2-WWT-6	ACID	Red	Wastewater Treatment System - upper level/Sodium meta bisulfate	Clear liquid	28	18 (Liquid)	4	*	NA
North Sec. Cont.	NEUTRAL	Blue	Liquids are present east of Vat #51	Reddish-brown liquid	400	0-4 (Liquid)	*	*	CN=21 mg/kg Cr (total)=141 mg/kg Zn=460 mg/kg pH = 6.88
South Sec. Cont.	N/A	N/A	Secondary containment in southern room	Empty	0	0	*	*	NA
Sump	N/A	N/A	EPA-identified sump in WWT area - not clear which one	-	-	-	5 (EPA)	*	NA
South WWT Sump	NEUTRAL	Blue	Southern wastewater treatment system sump	Clear liquid, some sludge in bottom	NM	7 (Liquid)	8	negative	NA
North WWT Sump	NEUTRAL	Blue	Northern wastewater treatment system sump	Clear liquid	NM	NM	8	negative	NA
Sump in SW Room	NEUTRAL	Blue	Southwestern room wastewater treatment system sump	Liquid	NM	3 (Liquid)	neutral	negative	NA
55-gal open top poly	NEUTRAL	Blue	Open poly drum south of the south zinc plating line	Rain water	17	10	8-9	negative	NA
Blue unlabeled drum - WWT	NEUTRAL	Drum	Wastewater treatment system - lower level	Viscous clear liquid	50	Full (Liquid)	8-9	negative	NA
N-WWT Rectangular Tank	NEUTRAL	Blue	Rectangular tank at eastern end of wastewater treatment system	Clear liquid/sludge - wastewater or possible rainwater	500	75% (Liquid)	*	*	NA
S-WWT Rectangular Tank	NEUTRAL	Blue	Rectangular tank at eastern end of wastewater treatment system	Clear liquid - wastewater or possible rainwater	500	75% (Liquid)	*	*	NA
N-WWT Cylindrical Poly	NEUTRAL	Blue	~2,000 gallon poly tank located at eastern end of wastewater treatment system	Sludge	300	<25%	*	*	NA
Middle-WWT Cylindrical Poly	NEUTRAL	Blue	~2,000 gallon poly tank located at eastern end of wastewater treatment system	Sludge	500	<25%	*	*	NA

Table 1 - Container Inventory
Former Orange County Metal Processing

Container ID	Waste Category	Color Code	Location/Contents	Description of Contents	Estimated Remaining Volume (gallons)	Estimated Remaining Material (inches)	Field Screening Results		Laboratory Results
							pH	Oxidizer	
S-WWT Cylindrical Poly	NEUTRAL	Blue	~2,000 gallon poly tank located at eastern end of wastewater treatment system	Sludge	200	<25%	*	*	NA
1 drum CaCl 1/2 full on L2 WWT	NEUTRAL	Drum	Drum on upper level of wastewater treatment system	37% calcium chloride	30	50% (Liquid)	*	*	NA
1 drum Hypochlorite in WWT	CAUSTIC	Drum	Drum on lower level of wastewater treatment system, western end	Hypochlorite	50	Full	*	*	NA
W-Clarifier	EMPTY	N/A	Large blue tank in southern portion of WWT area, tapers at bottom.	Empty	0	0	*	*	NA
E-Clarifier	EMPTY	N/A	Large blue tank in southern portion of WWT area, tapers at bottom.	Empty	0	0	*	*	NA
Misc Lab Pack in South Room and office storage east of office	-	-	Lab pack includes many less than 10 gallon containers in the southern room, office, and storage area east of the office	-	-	-	-	-	NA
5 gal black bucket	lab pack	lab pack	Located in south room, To be included in lab pack	Clear liquid	1	2 (Liquid)	neutral	slightly oxidizing	NA

Notes:

*	Not tested
NA	Sample not analyzed
NM	Not measured
N/A	Not applicable

Table 2
Summary of Laboratory Analytical Results
Orange County Metal Processing Assessment
Fullerton, Orange County, Califorina

Sample ID	Comparison Criteria	OCMP-01	OCMP-02	OCMP-03	OCMP-04	OCMP-05	OCMP-06	OCMP-07	OCMP-08	OCMP SAL V-5	OCMP SAL V-12	OCMP SAL V-17	OCMP SZPL V-42	OCMP NZPL V-51	OCMP-SZPL V-30	NZPL-SC	WWT-1 and 5
Container ID		31	32	24	13	18	50	WWT#6	WWT#XX	5	12	17	42	51	30	North Secondary Containment	WWT#1 and #5 Composite
Matrix		Liquid	Liquid	Liquid	Liquid	Liquid	Solid	Liquid	Solid	Liquid	Liquid	Liquid	Liquid	Solid	Solid	Liquid	Liquid
Total Metals by EPA Method 6010B/7471A (mg/kg)	**TTLC (mg/kg)**	Apr-14								5/14/2014					5/15/2014		
Antimony	500	<5.0	<5.0	150	<5.0	8.2J	<120	<5.0	<25	<0.75	<0.773	<0.746	<0.765/<0.735	<0.718	<0.746	<0.75	<0.743
Arsenic	500	<1.5	<1.5	<7.5	<1.5	<1.5	<37	<1.5	<7.5	0.979	2.17	<0.746	1.69/2.24	12.1	2.95	<0.75	<0.743
Barium	10,000	11	<0.74	<3.7	<0.75	3.3	110	2.3	210	10.4	**50,100**	1.97	75.5/103	115	2.58	21	4.88
Beryllium	75	<0.25	<0.25	<1.2	<0.25	<0.25	<6.2	<0.25	<1.2	<0.25	<0.258	<0.249	<0.255/<0.245	<0.239	<0.249	<0.25	<0.248
Cadmium	100	<0.25	0.34J	<1.2	<0.25	0.92	<6.2	<0.25	30	<0.5	1.14	<0.498	1.49/2.35	<0.478	0.869	3.01	1.22
Chromium (total)	2,500	7.6	<0.50	**10000**	1.4	510	<12	2.0	740	182	**3,050**	19.7	38.2/57.4	8.82	7.62	141	0.627
Chromium VI	500	N/A	N/A	N/A	N/A	N/A	<0.40	<0.40	<0.40	N/A	**660**	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt	8,000	<0.50	<0.50	<2.5	<0.50	0.67J	<12	<0.50	5.9	<0.25	<0.258	<0.249	0.28/0.388	1.96	0.391	<0.25	<0.248
Copper	2,500	5.3	200	400	<1.0	24	<25	2.5	380	8.53	110	3	60.2/121	220	111	36.4	1.18
Lead	1,000	<0.99	<0.99	8.7J	<1.0	12.0	<25	<1.0	85	<0.5	34.6	3.02	5.75/10.5	1.02	0.821	2.03	<0.495
Molybdeum	3,500	<0.99	<0.99	<5.0	<1.0	<0.99	<25	<1.0	6.0J	0.425	2.44	0.912	5.52/5.92	6.16	0.707	1.25	<0.248
Nickel	2,000	<0.99	<0.99	<5.0	<1.0	23	<25	1.3J	110	1.28	7.28	2.12	3.21/4.55	1.45	1.43	5.66	0.858
Selenium	100	2.2J	<1.5	<7.5	<1.5	<1.5	<37	<1.5	<7.5	<0.75	<0.773	<0.746	<0.765/<0.735	<0.718	<0.746	<0.75	<0.743
Silver	500	<0.74	<0.74	<3.7	<0.75	<0.74	<19	<0.75	<3.7	<0.25	0.547	<0.249	<0.255/<0.245	<0.239	<0.249	<0.25	<0.248
Thallium	700	<5.0	<5.0	<25	<5.0	<4.9	<120	<5.0	<25	<0.75	1.96	<0.746	<0.765/<0.735	<0.718	<0.746	<0.75	<0.743
Vanadium	2,400	<0.50	<0.50	<2.5	<0.50	<0.49	<12	<0.50	17	4.75	<0.258	<0.249	0.928/1.07	0.407	<0.249	0.724	<0.248
Zinc	5,000	550	2100	4300	<2.5	2,100	**23000**	7.0	4,200	44.3	24.2	852	**4,840/6,990**	**46,800**	**23100**	460	415
Mercury	20	<0.012	0.016	<0.012	<0.012	<0.012	0.0230	<0.012	0.020	<0.0833	<0.0820	<0.0847	<0.086/<0.082	<0.0794	<0.0806	<0.0833	<0.0847
Other Analyses	**RCRA Characteristic Waste**																
Cyanide, Total (mg/kg)	Meets criterion of reactivity if generates toxic fumes when exposed to acidic conditions	**240**	**2600**	N/A	N/A	N/A	**3300**	N/A	**90**	12	N/A	N/A	4.1/15	**3,000**	**460**	21	<0.5
Cyanide, Amenable (mg/kg)		**240**	**2600**	N/A	N/A	N/A	**3200**	N/A	**110**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
pH	pH ≤ 2; pH ≥ 12.5	9.63	10.3	2.74	7.82	3.81	9.26	**1.59**	9.38	**12.82**	2.29	2.82	9.99/9.94	9.41	9.78	6.88	6.99

Notes:
N/A = Not analyzed
mg/kg = milligrams per kilogram
J = Estimated Value
RCRA = Resource Conservation and Recovery Act
TTLC = Total Threshold Limit Concentration
Results in **bold** exceed TTLC or RCRA characteristic waste criterion
"Not detected" results are indicated as less than the method detection limit
OCMP-1 - OCMP-8 collected by ecology & environment. Other samples collected by Dudek and Chempack & Environmental

DUDEK

AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 1
Site Location Map

6365
May 2014

Orange County Metal Processing

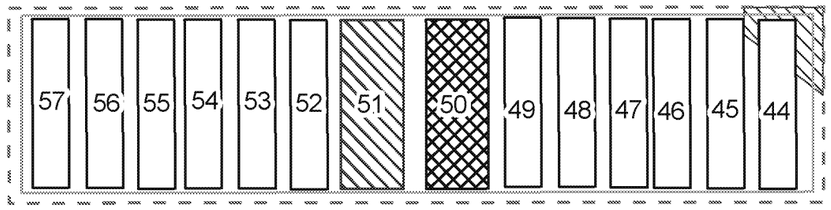
DUDEK

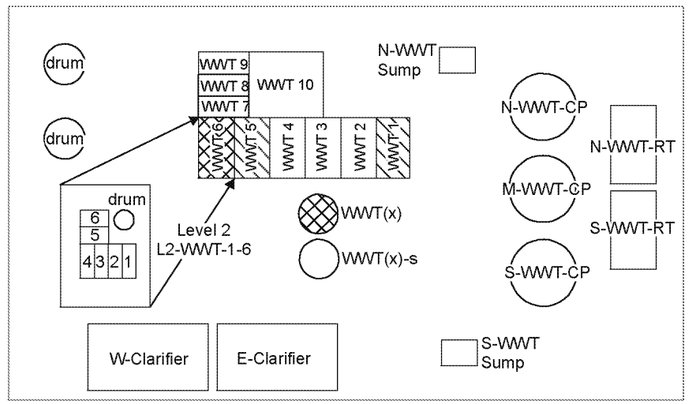
AERIAL SOURCE: BING MAPPING SERVICE

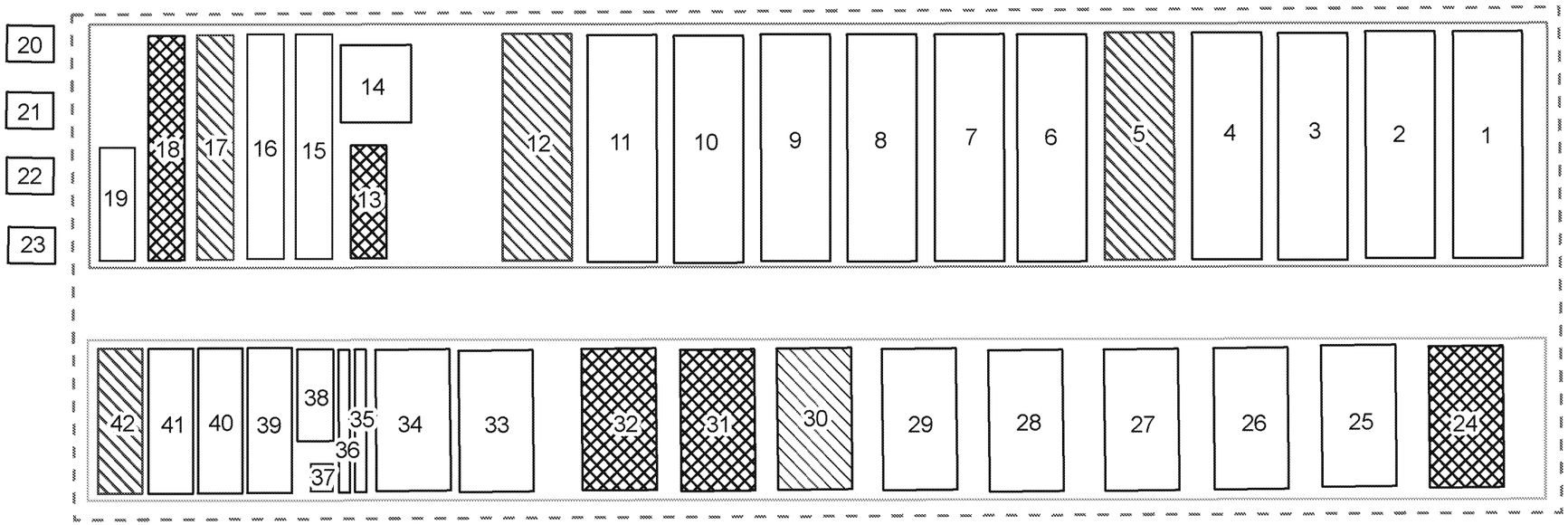
FIGURE 2
Site Map

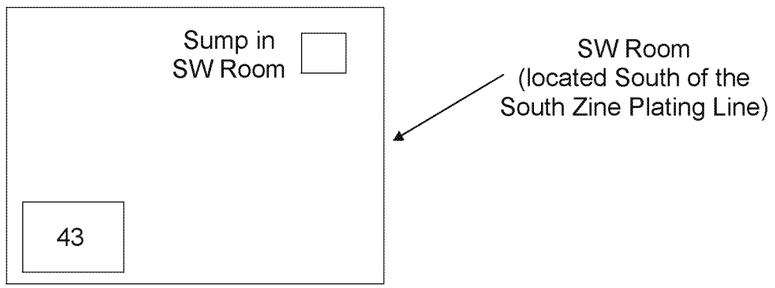
8355
May 2014

Orange County Metal Processing









NOT TO SCALE

Legend

- WasteWaterInset
- Vat Sampled by EPA
- Vat Sampled by Dudek/Chempack
- Vat
- Secondary Containment
- North Zinc Plating Line
- South Anodizing Line
- South Zinc Plating Line
- Wastewater Treatment Area

DUDEK

8355
May 2014

SOURCE: EPA

FIGURE 3

Sampling Locations

Orange County Metal Processing